



09-538396

Cox

Attorney Docket No. 1116E

**PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Number : 6,815,578 B1  
Issued : November 9, 2004  
Name of Patentee : Pioneer Hi-Bred International, Inc.  
Title of Invention : Polynucleotide Encoding Mre11 Binding Polypeptide  
and Uses Thereof

Attention Certificate of Corrections Branch  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT  
FOR PTO MISTAKE (37 CFR 1.322(a))**

1. Attached, in duplicate, is Form PTO/SB/44, with at least one copy being suitable for printing.
2. The exact page and line number where the errors are shown correctly in the application file are:

Uchimiya reference is correctly presented on the Form 1449 submitted June 23, 2000, Sheet 2 of 2, Reference A12. A copy is attached for the convenience of the office.

Claim 3 amendment is described correctly on page 2, section "In the Claims", first line, in the Examiner's Amendment sent with the Notice of Allowability issued March 23, 2004. A copy is attached for the convenience of the office.

**Certificate**  
**DEC 1 5 2004**  
**of Correction**

DEC 1 6 2004

Patent No. 6,815,578 B1  
Issued 11/09/2004  
Attorney Docket No. 1116E

3. Please send the Certificate to:

Name Virginia Dress  
Address: Pioneer Hi-Bred International, Inc.  
Corporate Intellectual Property  
7100 N.W. 62<sup>nd</sup> Avenue  
P.O. Box 1000  
Johnston, Iowa 50131-1000

Respectfully submitted,



Virginia Dress  
Agent for Applicant(s)  
Registration No. 48,243

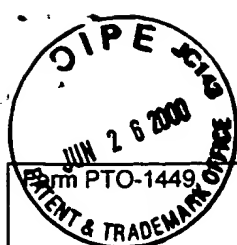
PIONEER HI-BRED INTERNATIONAL, INC.  
Corporate Intellectual Property  
7100 N.W. 62<sup>nd</sup> Avenue  
P.O. Box 1000  
Johnston, Iowa 50131-1000  
Phone: (515) 270-4192  
Facsimile: (515) 334-6883

DEC 16 2004

Applicant

#3

Sheet 1 of 2



U.S. Department of Commerce Patent and Trademark Office <b>INFORMATION DISCLOSURE STATEMENT</b> <b>BY APPLICANT</b> (Use several sheets if necessary)		ATTORNEY DOCKET NO. 1116	SERIAL NO. 09/538,396
		APPLICANT Mahajan, et al.	
		FILING DATE March 29, 2000	GROUP 1638

## U.S. PATENT DOCUMENTS

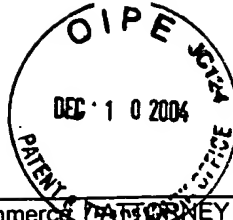
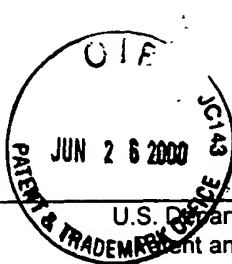
Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate

## FOREIGN PATENT DOCUMENTS

Document Number	Date	Country	Class	Subclass	Translation Yes	No

## OTHER DOCUMENTS (Including Author, Title, Date Pertinent Pages, Etc.)

MAJ	A1	Kupiec and Simchen, 1984, <i>Mol. Gen Genet</i> , 193: 525-531, "Cloning and Mapping of the RAD50 Gene of <i>Saccharomyces cerevisiae</i> "
	A2	Raymond and Kleckner, 1993, <i>Nucleic Acids Res.</i> , 21(16): 3851-3856, "RAD50 protein of <i>S. cerevisiae</i> exhibits ATP-dependent DNA binding"
	A3	Alani, et al., 1989, <i>Genetics</i> , 122: 47-57, "The Yeast RAD50 Gene Encodes a Predicted 153-kD Protein Containing a Purine Nucleotide-Binding Domain and Two Large Heptad-Repeat Regions"
	A4	Malkova, et al., 1996, <i>Genetics</i> , 143: 741-754, "Meiotic Recombination Initiated by a double-Strand Break in <i>rad50Δ</i> Yeast Cells Otherwise Unable to Initiate Meiotic Recombination"
	A5	Johzuka and Ogawa, 1995, <i>Genetics</i> , 139: 1521-1532, "Interaction of Mre11 and Rad50: Two Proteins Required for DNA Repair and Meiosis-Specific Double-Strand Break Formation in <i>Saccharomyces cerevisiae</i> "
	A6	Jeggo, P.A., 1998, <i>Radiation Res.</i> , 150 (Suppl.) S80-S91, "Identification of Genes Involved in Repair of DNA Double-Strand Breaks in Mammalian Cells"
	A7	Tsukamoto, et al., <i>Mol. Gen Genet</i> , 255: 543-547, "Budding yeast Rad50, Mre11, Xrs2, and Hdf1, but not Rad52, are involved in the formation of deletions on a dicentric plasmid"
EXAMINER		DATE CONSIDERED
Medina A. Ibrah		11/12/01
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.		



Form PTO-1449	U.S. Department of Commerce Patent and Trademark Office	PATENT KEY DOCKET NO. 1116	SERIAL NO. 09/538,396
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use several sheets if necessary)		APPLICANT Mahajan, et al.	
		FILING DATE March 29, 2000	GROUP 1638

**OTHER DOCUMENTS** (Including Author, Title, Date Pertinent Pages, Etc.)

MAI	A8	Kim, et al., 1996, <i>Journal of Bio. Chem.</i> , 271(46): 29255-29264, "Mouse RAD50 Has Limited Epitopic Homology to p53 and Is Expressed in the Adult Myocardium*"
	A9	Dolganov, et al., 1996, <i>Mol. and Cell. Biology</i> , 1996, 16(9): 4832-4841, "Human Rad50 Is Physically Associated with Human Mre11: Identification of a Conserved Multiprotein Complex Implicated in Recombinational DNA Repair"
	A10	Carney, et al., 1998, <i>Cell</i> , 93: 477-486, "The hMre11/hRad50 Protein Complex and Nijmegen Breakage Syndrome: Linkage of Double-Strand Break Repair to the Cellular DNA Damage Response"
	A11	Trujillo, et al., 1998, <i>Journal of Bio. Chem.</i> , 273(34): 21447-21450, "Nuclease Activities in a Complex of Human Recombination and DNA Repair Factors Rad50, Mre11, and p95*"
	A12	Uchimiya, H., 1998, <i>GenBank Accession No. D42331</i> , "On nucleotide sequence of <i>Oryza sativa</i> "
	A13	Lin, et al., 2000, <i>GenPept Accession No. AAD15407</i> , "Sequence and analysis of chromosome 2 of the plant <i>Arabidopsis thaliana</i> "
	A14	Lin, et al., 1999, <i>GenBank Accession No. AC006223 AE002093</i> , "Sequence and analysis of chromosome 2 of the plant <i>Arabidopsis thaliana</i> "

EXAMINER Medina A. Ibrahim	DATE CONSIDERED 11/12/01
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EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

# **Notice of Allowability**

Application No.

09/538,396

Examiner

Medina A Ibrahim

Applicant(s)

MAHAJAN ET AL.

Art Unit

1638

**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address–**  
All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment of 02/24/04.
2. ☒ The allowed claim(s) is/are 2-8, 19-20, 22-30 renumbered as 2-8, 1, 9, 10-18, respectively.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

5. ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
(a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No. \_\_\_\_\_.  
(b) ☐ including changes required by the proposed drawing correction filed \_\_\_\_\_, which has been approved by the Examiner.  
(c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## **Attachment(s)**

- 1 ☐ Notice of References Cited (PTO-892)
- 2 ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3 ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No. \_\_\_\_\_
- 4 ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material

- 5 ☐ Notice of Informal Patent Application (PTO-152)
- 6 ☒ Interview Summary (PTO-413), Paper No. 03-04.
- 7 ☒ Examiner's Amendment/Comment
- 8 ☐ Examiner's Statement of Reasons for Allowance
- 9 ☐ Other \_\_\_\_\_

**DOCKETED**  
MAR 30 2004

Art Unit: 1638

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Virginia Dress on 03/10/04.

The application has been amended as follows:

In The Title:

The title is replaced with --A POLYNUCLEOTIDE ENCODING MREI1 BINDING POLYPEPTIDE AND USES THEREOF---.

In The Abstract:

The abstract on page 67 is replaced with the following:

--The invention provides isolated polynucleotides encoding MREI1 binding polypeptides, recombinant expression cassettes, host cells, and transgenic plants comprising said polynucleotides---.

In The Claims:

At claims 3 and 24, "comprising" has been replaced with ---transformed with ---.

Claim 19 (Currently amended). An isolated polynucleotide [comprising a polynucleotide] selected from the group consisting of:

(a) the polynucleotide [nucleic acid sequence] of SEQ ID NO: 1; and

Art Unit: 1638

(b) a polynucleotide [nucleic acid sequence] which is fully complementary to the polynucleotide [nucleic acid sequence] of (a).

Claim 20 (Currently amended). An isolated polynucleotide [comprising a polynucleotide] selected from the group consisting of:

(a) a polynucleotide [nucleic acid sequence] encoding a polypeptide having at least 95% sequence identity over its [the] entire length [of] to SEQ ID NO: 2; as determined by the GAP program under default parameters, wherein the encoded polypeptide binds to a MRE11 polypeptide; and

(b) a polynucleotide [nucleic acid sequence] which is fully complementary to the polynucleotide [nucleic acid sequence] of (a).

At claim 25, "A" has been replaced with ---The---.

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Medina A. Ibrahim whose telephone number is (571) 272-0797. The Examiner can normally be reached Monday -Thursday from 8:00AM to 5:30PM and every other Friday from 9:00AM to 5:00 PM. Before and after final responses should be directed to fax nos. (703) 872-9306 and (703) 872-9307, respectively.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Dr. Amy Nelson, can be reached at (571) 272-0804.

Mai  
3/9/04



AMY J. NELSON, PH.D  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600

## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO : 6,815,578 B1

DATED : November 9, 2004

INVENTOR(S) : Pramod B. Mahajan, Urbandale, IA (US); Jinrui Shi, Johnston, IA (US)

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Title Page, Item (56), References Cited, PUBLICATIONS, Uchimiya, H. reference should read as follows:

-- Uchimiya, H., 1998 GenBank Accession No. D42331, "On nucleotide sequence of *Oryza sativa*"--.


Column 61, claim 3 should read as follows:

--3. A host cell transformed with the polynucleotide of claim 1.--

MAILING ADDRESS OF SENDER: Pioneer Hi-Bred International, Inc.  
7100 N.W. 62<sup>nd</sup> Ave.  
P.O. Box 1000  
Johnston, Iowa 50131-1000

PATENT NO. 6,815,578 B1

No. of additional copies

 Page 1 of 1

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

DEC 1 6 2004

## UNITED STATES PATENT AND TRADEMARK OFFICE

### CERTIFICATE OF CORRECTION

PATENT NO : 6,815,578 B1

DATED : November 9, 2004

INVENTOR(S) : Pramod B. Mahajan, Urbandale, IA (US); Jinrui Shi, Johnston, IA (US)

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
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MAILING ADDRESS OF SENDER: Pioneer Hi-Bred International, Inc.  
7100 N.W. 62<sup>nd</sup> Ave.  
P.O. Box 1000  
Johnston, Iowa 50131-1000

PATENT NO. 6,815,578 B1

No. of additional copies

 Page 1 of 1

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



## Certificate of Mailing under 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

on December 7, 2004

Date

*Virginia Dress*

Signature

Virginia Dress

Typed or printed name of person signing Certificate

48,243

Registration Number, if applicable

(515) 270-4192

Telephone Number

Note: Each paper must have its own certificate of mailing, or this certificate must identify each submitted paper.

- 1) Request for Certificate of Correction of Patent/ 2 Pages (1 copy)
- 2) Copy of IDS (1449) Filed 06-23-2000/ 2 Pages (1 copy)
- 3) Copy of Notice of Allowability Issued 03-23-2004/ 3 Pages (1 copy)
- 4) Certificate of Correction/ 1 Page (2 copies)

This collection of information is required by 37 CFR 1.8. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1.8 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.